

ABSTRACT

An electric power supply system capable of maintaining stable power generation or the like regardless of variation in the amount of fuel gas being supplied and variation in the gas calorie, comprises a gas engine, a gas turbine, a suction device (6) configured to collect the generating gas, a gas separating device (8) configured to classify the gas collected according to the calorie, a gas calorie adjusting device (10) configured to mix gases having different calories which are supplied from the gas separating device (8) to adjust gas calorie before supplying to the gas engine and the gas turbine, a gas amount balance monitor device (16) configured to monitor balance between the amount of gas being consumed by the gas turbine and the gas engine in operation and the amount of gas being supplied from the gas calorie adjusting device (10), and a system control device (100) configured to control operation of the gas engine, operation of the gas turbine, and operation of the gas calorie adjusting device (10).